

Unit 8: Car Ownership

12/11/14

**Wrap up your Unit 6 test.
(15 min)**

8.1 Car Leasing

12/11/14

Understand the terms of a car lease.

lease - a contract to pay for a car for a certain time period, at the end of which you purchase the car or return it to the dealer

\$#/month for # months - lease term

security deposit - money you pay up front against possible damages and excess mileage

acquisition fee - a fee paid to lease the car

cash due at signing - total of all fees & down payments

8.1 Car Leasing

12/11/14

Understand the terms of a car lease.

*Lease financing available on 2010 Apex vehicles, only at participating Apex centers on leases assigned to Apex Financial Services NA, LLC/Financial Services Vehicle Trust through April 30, 2010.

Monthly lease payments of \$339.00 for 36 months based on MSRP

of \$35,500.00 (includes Premium Package, Automatic Transmission, and Destination). **Total lease payments are \$12,204.00**

Excludes tax, title, license, acquisition, and registration fees.

Lessee must cover insurance and all items not covered under the Apex Maintenance Program. **At lease end, lessee will be liable for**

disposition fee (\$350.00)

any excess wear and use as set forth in the lease agreement, and **excess mileage charges of \$0.20 per**

mile for miles driven in excess of 10,000 miles per year. Purchase

option at lease end for \$21,655.00 excludes taxes

no ownership interest unless purchase option is exercised. See participating Apex centers for details and vehicle availability.

IWBAT

- Factor the total payment, including the amount due at signing.
- Understand the required insurance for a car lease.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

8.1 Car Leasing

12/11/14

Monthly payment

You need to know these things:

- n ■ lease term -
- MSRP of car -
- down payment -
- purchase value of car after lease -
- lf ■ lease factor - $APR/2400$

$$M = \underbrace{\frac{\text{MSRP} - \text{down} - \text{purchase\$}}{n}}_{\text{Depreciation factor}} + \underbrace{lf(\text{MSRP} - \text{down} + \text{purchase\$})}_{\text{Finance fee}}$$

IWBAT factor the total payment, including the amount due at signing, and understand the required insurance for a car lease.

8.1 Car Leasing

12/11/14

$$M = \frac{\text{MSRP} - \text{down} - \text{purchase\$}}{n} + lf(\text{MSRP} - \text{down} + \text{purchase\$})$$

$$m = \frac{(35500 - 2800 - 21655)}{36} + 0.0006123(35500 - 2800 + 21655)$$

$$m = \$340.09$$

ask dealer

$$lf = 0.0006123$$

2010 Apex Coupe
Lease Offer

Well-equipped with automatic transmission and premium package. Includes destination charge.



/month for 36 months

- first month's payment
- \$2800 down payment
- \$350 security deposit
- \$725 acquisition fee
- \$4274 cash due at signing

*Lease financing available on 2010 Apex vehicles, only at participating Apex centers on leases assigned to Apex Financial Services NA, LLC/Financial Services Vehicle Trust through April 30, 2010. **Monthly lease payments of \$339.00 for 36 months based on MSRP of \$35,500.00 (includes Premium Package, Automatic Transmission, and Destination). Total lease payments are \$12,204.00.** Excludes tax, title, license, acquisition, and registration fees.

Lessee must cover insurance and all items not covered under the Apex Maintenance Program. **At lease end, lessee will be liable for disposition fee (\$350.00), any excess wear and use as set forth in the lease agreement, and excess mileage charges of \$0.20 per mile for miles driven in excess of 10,000 miles per year. Purchase option at lease end for \$21,655.00 excludes taxes.** Lessee acquires no ownership interest unless purchase option is exercised. See participating Apex centers for details and vehicle availability.

IWBAT factor the total payment, including the amount due at signing, and understand the required insurance for a car lease.

8.1 Car Leasing

12/11/14

$$M = \frac{\text{MSRP} - \text{down} - \text{purchase\$}}{n} + lf(\text{MSRP} - \text{down} + \text{purchase\$})$$

$$M = \frac{\text{Pr}(1+r)^n}{(1+r)^n - 1}$$

Purchase the same car at 2.4% APR for 5 years.

$$= \frac{35500 \left(\frac{.024}{12} \right) \left(1 + \frac{.024}{12} \right)^{60}}{\left(\left(1 + \frac{.024}{12} \right)^{60} - 1 \right)} = \$628.47$$

$$(60)(628.47) = \$37708.20$$

Compare the lease + purchase offer to purchase only.

$$36(340.09) + 2800 + 750 + 340 + 21655 =$$

$$\$37788.24$$

IWBAT factor the total payment, including the amount due at signing, and understand the required insurance for a car lease.

Get a computer, log in, and open the Chrome browser. You may work as pairs (2).

Proceed to one of these addresses:

Drag & Drop

- <http://hourofcode.com/code>
- <http://hourofcode.com/sc>
- <http://hourofcode.com/lb>

JavaScript

- <http://hourofcode.com/kh>
- <http://hourofcode.com/cdmy>
- <http://hourofcode.com/cv>

JavaScript or Python

- <http://hourofcode.com/cc>

IWBAT program my own computer animation or quiz in order to understand the accessibility and utility of learning computer science.

8.1 Car Leasing

12/15/14

What else needs to be known about leasing a car?

lease penalty - *fee for excessive wear*

mileage allowance - *how far you are allowed to drive during the lease period*

insurance - *pays for damages to your car, others' car you hit, others' property, medical due to wreck, Uninsured motorist*

factors - *Age, Credit report, driving record, type of vehicle, gender*

IWBAT factor the total payment, including the amount due at signing, and understand the required insurance for a car lease.

8.1 Car Leasing

12/15/14

insurance -

New car - full coverage, minimums for coverage

Used car - less than full coverage, minimums

Leased car - full coverage, maximum

IWBAT factor the total payment, including the amount due at signing, and understand the required insurance for a car lease.

8.1 Car Leasing

12/15/14

Calculating costs

Term: 36 mo.

MSRP: \$32,459

Purchase value after lease: \$19,475

Down payment: \$1900

Security deposit: \$400

Acquisition fee: \$750

Monthly payment: \$338

Total lease cost:

$$338(36) + 1900 + 750 + 400 = \$15,218$$

Lease + purchase cost:

$$\$15,218 + 19,475 = \$34,693$$

IWBAT factor the total payment, including the amount due at signing, and understand the required insurance for a car lease.

8.1 Car Leasing

Serial leasing

12/15/14

	New car — paid off in 5 years	New car — paid off in 10 years	Lease *
Monthly payment	\$477.99	\$253.31	\$341.39
Total cost after 3 years	\$17,207.64	\$9119.16	\$12,290.04
Total cost after 12 years	\$28,679.40	\$30,397.20	\$51,659.20

* Four three-year leases

IWBAT factor the total payment, including the amount due at signing, and understand the required insurance for a car lease.

8.1 Car Leasing

12/15/14

Vocabulary: Appendix A.3 Key Terms

Practice: 8.1.2

Quiz 8.1.3

IWBAT factor the total payment, including the amount due at signing, and understand the required insurance for a car lease.

8.2 Car Renting & Sharing

12/16/14

What factors into the total payment of a car lease?

monthly payments
down payment
acquisition fee
security deposit - nonrefundable
+ penalty fee
+ mileage overage

8.2 Car Renting & Sharing

12/16/14

IWBAT

- Compare the cost of renting, leasing, and sharing.
- Understand the process of car sharing.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

8.2 Car Renting & Sharing

12/16/14

Calculate the total cost of car renting, including insurance fees.

Daily rental fee — miles, hold use just for you, normal wear and tear, basic cleaning

Insurance — check your auto policy, check w/ credit card for coverage

CDW — Collision Damage Waiver

LW — Loss Waiver

Youth — people under 25 y.o.

IWBAT compare the cost of renting, leasing, and sharing, and understand the process of car sharing.

8.2 Car Renting & Sharing

12/16/14

How much will it cost to rent this car for six days?

Rental car

\$45/day

x Optional CDW \$26.99

Optional LW \$15.99

$$\begin{array}{l} (45 + 15.99) \times 6 = \$365.94 \\ \text{\$/day} \quad \text{days} \end{array}$$

What about for 30 days?

$$5 \times \$365.94 = \$1829.70$$

IWBAT compare the cost of renting, leasing, and sharing, and understand the process of car sharing.

8.2 Car Renting & Sharing

12/16/14

If leasing the same car costs \$338 per month, compare leasing and renting short term and long term.

\$338/mo lease — long term (years)

\$1800/mo rent } short term (days)
\$365/wk }

IWBAT compare the cost of renting, leasing, and sharing, and understand the process of car sharing.

8.2 Car Renting & Sharing

12/16/14

Car sharing (typical)

1. Pay a monthly (or annual) fee to join a car share group or club.
2. Call or go online to reserve the car
3. Agree to an hourly fee
4. Pick up the car & drive it around
5. Make sure there is gas in the tank
6. Park the car for the next person.

Advantages?

car to yourself

only for the hours you want

no insurance

gas tank doesn't have to be full

IWBAT compare the cost of renting, leasing, and sharing, and understand the process of car sharing.

8.2 Car Renting & Sharing

Real-world Denver example

12/16/14

Car2Go



Advantages?

Cheaper than rent'ng
< a day
one time fee
One-way trip
1/4 tank of gas

Disadvantages?

Small
Expensive > 1 day
no small children

IWBAT compare the cost of renting, leasing, and sharing, and understand the process of car sharing.

8.2 Car Renting & Sharing

12/16/14

If a car sharing service costs \$15/hr (\$0.50 per minute for less than one hour) and a car rental costs \$48 for one day, how long must you use the car to make the car share more economical?

3 hrs \$45 borrow < 3h 6m
6 min \$3

IWBAT compare the cost of renting, leasing, and sharing, and understand the process of car sharing.

8.2 Car Renting & Sharing

12/16/14

Vocabulary: Appendix A.3 Key Terms
Practice: 8.2.2

IWBAT compare the cost of renting, leasing, and sharing, and understand the process of car sharing.

8.3 Car Dealers

12/17/14

**Calculate the total cost of car renting,
including insurance fees.**

Car: \$39.99/day

CDW (required): \$24.99/day

LW (required): \$12.95/day

Period: 3 days

$$(39.99 + 24.99 + 12.95) \times 3 \\ = \$233.79$$

IWBAT

- Compute the dealer markup.
- Make calculations based on trade-ins.
- Understand car pricing and the Monroney sticker.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

8.3 Car Dealers

12/17/14

Steps to buying a car

1) Research

Economy
Options
Safety
Transmission style
Reliability
Prices
Reviews
Popularity

IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

8.3 Car Dealers

12/17/14

Car prices:

MSRP - Manufacturer's Suggested Retail Price — top price, pay less than this

Invoice - What the dealer actually paid — pay more

Book value - where you buy it matters

KBB


IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

8.3 Car Dealers

12/17/14

Car prices:

Sticker price - (Monroney sticker)


CHEVROLET

2012 CHEVROLET VOLT

EXTERIOR: WHITE DIAMOND TRICOAT
INTERIOR: JET BLACK/CERAMIC WHITE
ACCENTS

ENGINE, RANGE EXTENDER, 1.4L
ELECTRIC DRIVE UNIT, VOLTEC

Visit us at www.chevy.com

STANDARD EQUIPMENT

ITEMS FEATURED BELOW ARE INCLUDED AT NO EXTRA CHARGE IN THE STANDARD VEHICLE PRICE SHOWN.

- 8 YEAR / 100,000 MILE BATTERY AND VOLTEC COMPONENT LIMITED WARRANTY SEE DEALER FOR DETAILS
- 5 YEAR / 100,000 MILE POWERTRAIN LIMITED WARRANTY SEE DEALER FOR DETAILS

MECHANICAL

- BATTERY, PROPULSION, LITHIUM ION,
- ELECTRIC DRIVE UNIT, VOLTEC
- ENGINE, RANGE EXTENDER, 1.4L INTERNAL COMBUSTION ENGINE
- TIRE SEALANT & INFLATOR KIT IN PLACE OF SPARE TIRE

SAFETY & SECURITY

- NAMED A 2012 TOP SAFETY PICK BY THE INSURANCE INSTITUTE FOR HIGHWAY SAFETY

- AIRBAGS, DUAL-STAGE FRONTAL, SIDE-IMPACT & KNEE FOR DRIVER AND FRONT PASSENGER
- AIRBAGS, ROOF RAIL SIDE-IMPACT FOR FRONT AND REAR OUTBOARD SEATING POSITIONS
- ANTILOCK BRAKE SYSTEM, 4 WHEEL DISC
- REAR CHILD SEAT LATCH ANCHORS
- THEFT DETERRENT SYSTEM, CONTENT THEFT ALARM
- DAYTIME RUNNING LAMPS
- STABILTRAK-STABILITY CONTROL INCLUDES TRACTION CONTROL
- REMOTE KEYLESS ENTRY WITH REMOTE START
- PEDESTRIAN FRIENDLY ALERT
- POWER DOOR LOCKS WITH LOCKOUT PROTECTION
- HEADLAMPS, AUTO ON/OFF
- TIRE PRESSURE MONITOR
- KEYLESS ACCESS

- 3 YRS ONSTAR DIRECTIONS & CONNECTIONS W/ AUTOMATIC CRASH RESPONSE, TURN-BY-TURN NAVIGATION, MYVOLT.COM, AND ONSTAR REMOTELINK (ASK DEALER ABOUT GEOGRAPHIC COVERAGE)

EXTERIOR

- MIRRORS, OUTSIDE HEATED, POWER ADJUSTABLE, BODY COLOR
- REAR WINDOW DEFROSTER
- WINDSHIELD WIPERS VARIABLE & INTERMITTENT
- WINDSHIELD, SOLAR ABSORBING
- WHEELS, 17" FORGED PAINTED ALUMINUM

INTERIOR

- COLOR TOUCH RADIO WITH 7" SCREEN, 6 SPEAKERS
- AIR CONDITIONING, AUTOMATIC
- AUXILIARY AUDIO INPUT JACK
- FLOOR MATS, CARPET FRONT/REAR
- INSIDE REARVIEW MIRROR,

AUTO DIMMING

- STEERING COLUMN, TILT & TELESCOPING
- VISORS, ILLUMINATED VANITY MIRRORS
- EFFICIENCY DISPLAY SCREENS W/ PROGRAMMABLE CHARGE TIMES
- STEERING WHEEL RADIO CONTROLS
- CRUISE CONTROL
- FRONT BUCKET SEATS
- REAR SEAT, 40/40 SPLIT FOLDING SEATBACK
- POWER WINDOWS EXPRESS DOWN, DRIVER EXPRESS UP
- USB PORT
- XM RADIO + SERVICE SUBSCRIPTION SOLD SEPARATELY BY SIRIUSXM AFTER 3 MTHS
- UNIVERSAL HOME REMOTE
- BLUETOOTH FOR PHONE

OTHER

- CHARGE CORD, 120 V PORTABLE

OPTIONS & PRICING

MANUFACTURER'S SUGGESTED RETAIL PRICE

STANDARD VEHICLE PRICE	\$39,145.00
OPTIONS INSTALLED BY THE MANUFACTURER (MAY REPLACE STANDARD EQUIPMENT SHOWN)	
AUDIO SYSTEM WITH NAVIGATION, DVD ROM AND 30GB AUDIO HARD DRIVE STORAGE	1,995.00
PREMIUM TRIM PKG INCLUDES:	1,395.00
• LEATHER APPOINTED SEATING, PERFORATED	
• HEATED FRONT SEAT, DRIVER AND PASSENGER	
• LEATHER WRAP STEERING WHEEL	
WHITE DIAMOND TRICOAT	995.00
POLISHED ALUMINUM WHEELS	595.00
BOSE PREMIUM SPEAKER SYSTEM	495.00
TOTAL OPTIONS	\$5,475.00
TOTAL VEHICLE & OPTIONS	\$44,620.00
DESTINATION CHARGE	850.00

TOTAL VEHICLE PRICE* **\$45,470.00**

EPA DOT Fuel Economy and Environment

Fuel Economy Compact cars range from 10 to 60 MPGe. The best vehicle rates 112 MPGe.

Electricity Charge Time: 4 hours (240V)

94 MPGe 36 kWh per 100 miles
combined city/highway

37 MPG 2.7 gallons per 100 miles
combined city/highway

Driving Range
All electric range: 0 to 35 miles
Gasoline only: 35 to 375 miles

Annual fuel cost \$1,000

Fuel Economy & Greenhouse Gas Rating (tailpipe only) Smog Rating (tailpipe only)

1 10 6 10

This vehicle emits 87 grams CO₂ per mile. The best emits 0 grams per mile (tailpipe only). Producing and distributing fuel & electricity also create emissions; learn more at fuelconomy.gov

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 22 MPG and costs \$12,600 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.95 per gallon and \$0.12 per kWh-hr. This is a dual fueled automobile. MPGe is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fuelconomy.gov

Smartphone QR Code

Plug-In Hybrid Vehicle Electricity-Gasoline

You save \$7,600 in fuel costs over 5 years compared to the average new vehicle.

GOVERNMENT 5-STAR SAFETY RATINGS

Overall Vehicle Score ★★★★★
Based on the risk of injury in a frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.

Frontal Crash ★★★★★
Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.

Side Crash ★★★★★
Based on the risk of injury in a side impact.

Rollover ★★★★★
Based on the risk of rollover in a single-vehicle crash.

Star ratings range from 1 to 5 stars (★★★★★) with 5 being the highest.
Source: National Highway Traffic Safety Administration (NHTSA)
www.safercar.gov or 1-888-327-4236

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE:
U.S./CANADIAN PARTS CONTENT: 46%
MAJOR SOURCES OF FOREIGN PARTS CONTENT: KOREA 18%

NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS.

FOR THIS VEHICLE:
FINAL ASSEMBLY POINT: DETROIT, MI U.S.A.
COUNTRY OF ORIGIN: ENGINE: UNITED STATES
TRANSMISSION (ELECTRIC DRIVE UNIT): UNITED STATES

© 2013 General Motors LLC
GMSA, INC. (PNC) 2013-10000011

This label has been applied pursuant to Federal law. Do not remove prior to delivery to the ultimate purchaser. Includes Manufacturer's Recommended Pre-Delivery Service. Dealers will include dealer installed options and accessories not listed above, local taxes or license fees.

ORDER NO P07N2B SALES CODE E
SALES MODEL CODE 19C8
DEALER NO 31055
FINAL ASSEMBLY: DETROIT, MI U.S.A.
VIN 1G1RD6E46CU100281
DEALER TO WHOM DELIVERED: GENERAL MOTORS LLC
100 RENAISSANCE CTR/482-A25-C48

REISSUE

IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

8.3 Car Dealers Window Sticker

12/17/14



IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

8.3 Car Dealers Window Sticker

12/17/14

STANDARD EQUIPMENT <small>ITEMS FEATURED BELOW ARE INCLUDED AT NO EXTRA CHARGE IN THE STANDARD VEHICLE PRICE SHOWN</small> <ul style="list-style-type: none">• 8 YEAR / 100,000 MILE BATTERY AND VOLTEC COMPONENT LIMITED WARRANTY SEE DEALER FOR DETAILS• 5 YEAR / 100,000 MILE POWERTRAIN LIMITED WARRANTY SEE DEALER FOR DETAILS MECHANICAL <ul style="list-style-type: none">• BATTERY, PROPULSION, LITHIUM ION,• ELECTRIC DRIVE UNIT, VOLTEC• ENGINE, RANGE EXTENDER, 1.4L INTERNAL COMBUSTION ENGINE• TIRE SEALANT & INFLATOR KIT IN PLACE OF SPARE TIRE SAFETY & SECURITY <ul style="list-style-type: none">• NAMED A 2012 TOP SAFETY PICK BY THE INSURANCE INSTITUTE FOR HIGHWAY SAFETY	<ul style="list-style-type: none">• AIRBAGS, DUAL-STAGE FRONTAL, SIDE-IMPACT, & KNEE FOR DRIVER AND FRONT PASSENGER• AIRBAGS, ROOF RAIL SIDE-IMPACT FOR FRONT AND REAR OUTBOARD SEATING POSITIONS• ANTILOCK BRAKE SYSTEM, 4 WHEEL DISC• REAR CHILD SEAT LATCH ANCHORS• THEFT DETERRENT SYSTEM, CONTENT THEFT ALARM• DAYTIME RUNNING LAMPS• STABILITRAK-STABILITY CONTROL INCLUDES TRACTION CONTROL• REMOTE KEYLESS ENTRY WITH REMOTE START• PEDESTRIAN FRIENDLY ALERT• POWER DOOR LOCKS WITH LOCKOUT PROTECTION• HEADLAMPS, AUTO ON/OFF• TIRE PRESSURE MONITOR• KEYLESS ACCESS	<ul style="list-style-type: none">• 3 YRS ONSTAR DIRECTIONS & CONNECTIONS W/ AUTOMATIC CRASH RESPONSE, TURN-BY-TURN NAVIGATION, MYVOLT.COM, AND ONSTAR REMOTELINK (ASK DEALER ABOUT GEOGRAPHIC COVERAGE) EXTERIOR <ul style="list-style-type: none">• MIRRORS, OUTSIDE HEATED, POWER ADJUSTABLE, BODY COLOR• REAR WINDOW DEFROSTER• WINDSHIELD WIPERS VARIABLE & INTERMITTENT• WINDSHIELD, SOLAR ABSORBING• WHEELS, 17" FORGED PAINTED ALUMINUM INTERIOR <ul style="list-style-type: none">• COLOR TOUCH RADIO WITH 7" SCREEN, 6 SPEAKERS• AIR CONDITIONING, AUTOMATIC• AUXILIARY AUDIO INPUT JACK• FLOOR MATS, CARPET FRONT/REAR• INSIDE REARVIEW MIRROR,	<ul style="list-style-type: none">• AUTO DIMMING• STEERING COLUMN, TILT & TELESCOPING• VISORS, ILLUMINATED VANITY MIRRORS• EFFICIENCY DISPLAY SCREENS W/ PROGRAMMABLE CHARGE TIMES• STEERING WHEEL RADIO CONTROLS• CRUISE CONTROL• FRONT BUCKET SEATS• REAR SEAT, 40/40 SPLIT FOLDING SEATBACK• POWER WINDOWS EXPRESS DOWN, DRIVER EXPRESS UP• USB PORT• XM RADIO + SERVICE SUBSCRIPTION SOLD SEPARATELY BY SIRIUSXM AFTER 3 MTHS• UNIVERSAL HOME REMOTE• BLUETOOTH FOR PHONE OTHER <ul style="list-style-type: none">• CHARGE CORD, 120 V PORTABLE
---	--	--	--

IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

8.3 Car Dealers Window Sticker

12/17/14

Visit us at www.chevy.com

OPTIONS & PRICING		TOTAL VEHICLE PRICE* \$45,470.00	
MANUFACTURER'S SUGGESTED RETAIL PRICE			
STANDARD VEHICLE PRICE		\$39,145.00	
OPTIONS INSTALLED BY THE MANUFACTURER (MAY REPLACE STANDARD EQUIPMENT SHOWN)			
AUDIO SYSTEM WITH NAVIGATION, DVD ROM AND 30GB AUDIO HARD DRIVE STORAGE	1,995.00		
PREMIUM TRIM PKG INCLUDES:	1,395.00		
• LEATHER APPOINTED SEATING, PERFORATED			
• HEATED FRONT SEAT, DRIVER AND PASSENGER			
• LEATHER WRAP STEERING WHEEL			
WHITE DIAMOND TRICOAT	995.00		
POLISHED ALUMINUM WHEELS	595.00		
BOSE PREMIUM SPEAKER SYSTEM	495.00		
TOTAL OPTIONS		\$5,475.00	
TOTAL VEHICLE & OPTIONS		\$44,620.00	
DESTINATION CHARGE		850.00	

Dealer markup

Sale price — invoice

IWBAT compute the dealer markup, make calculations based on trade-ins, and investigate financing a car purchase.

8.3 Car Dealers

12/17/14

Trade-in

Negotiate your best deal
lowest between Inv + MSRP

Agreement

Then trade i

IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

8.3 Car Dealers

Negotiating

12/17/14

1) Look at the sticker price. Is it comparable to the book value on KBB?

- Yes/Less room to bargain
- No/More room to bargain

2) Calculate the markup from the invoice and sticker prices. Is it high or low?

- High/More room to bargain
- Low/Less room to bargain

3) Do you have a trade-in?

- Yes/Discount
- No/No discount

IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

8.3 Car Dealers

12/18/14

Your Blue Book® Value Show Used Car Prices | Price Your Next Car



2012 Chevrolet Volt

Style: Sedan 4D ▾

[Edit options](#) | [Check specs](#)



Mileage: 32000

[Change](#)

[Trade In
to a Dealer](#)

[Get an Instant
Cash Offer](#)

[Sell to a
Private Party](#)

[Print report](#)



Very Good Condition ⓘ



Price a New Car

Then browse reviews, photos, specs and more.

[See what you should pay](#)

Instant Cash Offer

Find local dealers ready to buy your car - today!

[Get your offer](#)

powered by [AutoTrader](#)

New Cars You Might Like

2015 Chevrolet Volt

[View](#)

2015 Ford Fusion Energi

[View](#)

2015 Lincoln MKZ

[View](#)

IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

8.3 Car Dealers

12/18/14

The Kelley Blue Book website interface for the 2015 Chevrolet Volt. The header includes the Kelley Blue Book logo, the text "Kelley Blue Book The Trusted Resource®", and social media links. The navigation bar contains links for Home, Car Values, Cars for Sale, Car Reviews, Awards & Top 10s, and Research Tools. The main content area is titled "2015 Chevrolet Volt Pricing" and displays the Fair Market Range as \$34,392 - \$35,322. A pie chart illustrates the pricing components: Fair Purchase Price (\$34,842), Invoice (\$35,815), and MSRP (\$37,465). A car image is shown on the left, and a "Details" button is available for the 2 available '15 models starting at \$32,999. The footer includes options to view all 64 photos, 8 colors, and a 360-degree view, along with a section for "Your Options" including Premium Trim Pkg, Safety Pkg 1, and Seats.

Kelley Blue Book The Trusted Resource®

Home | Car Values | Cars for Sale | Car Reviews | Awards & Top 10s | Research Tools

2015 Chevrolet Volt Pricing

The Fair Market Range for this car in your area is **\$34,392 - \$35,322**.

2014 2015 Base Style [look up another car](#)

\$34,842 Fair Purchase Price

\$35,322 Invoice

\$37,465 MSRP

\$34,392

KELLEY BLUE BOOK OFFICIAL GUIDE

2 available '15 models Starting at **\$32,999** [Details](#)

KING CHEVROLET, BUICK GMC

[View all 64 photos](#) [View all 8 colors](#) [360°](#)

Your Options: Premium Trim Pkg, Safety Pkg 1, Seats, ... [change options](#)

this car

IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

8.3 Car Dealers

12/18/14

Flipping a car purchase low, fix it up, sell for more

+

+

+profit

Warranty As-Is

Lemon Law

30 days

Private sellers vs. dealers

As-Is

IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

8.3 Car Dealers

12/18/14

Watch out for



IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

Vocabulary: Appendix A.3 Key Terms

Practice: 8.3.2

Quiz 8.3.3

IWBAT compute the dealer markup, make calculations based on trade-ins, and understand car pricing and the Monroney sticker.

8.4 Car Payments

12/19/14

Explain dealer markup.

$$\text{Sale price} - \text{invoice} = \text{markup}$$

$$\frac{\text{markup}}{\text{invoice}} \times 100 = \text{markup rate}$$

IWBAT

- Compute the total cost of a car purchase.
- Compute the monthly payment.
- Investigate the effect of a down payment on the total cost and monthly payment.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

8.4 Car Payments

12/19/14

What goes into the total cost of a car purchase?

financing - borrowed money + make payments
which include interest

down payment - money you pay at the beginning
to reduce how much you borrow

$$M = \frac{Pr(1+r)^n}{(1+r)^n - 1}$$

IWBAT compute the total cost of a car purchase, compute the monthly payment, and investigate the effect of a down payment on the total cost and monthly payment.

8.4 Car Payments

12/19/14

Calculate the monthly payment

$$M = \frac{Pr(1+r)^n}{(1+r)^n - 1}$$

You are financing a \$16,720 2012 Chevrolet Volt for 48 months at 4.6% APR. What is the monthly payment?

$$M = \frac{\$16720 \left(\frac{.046}{12} \right) \left(1 + \frac{.046}{12} \right)^{48}}{\left(\left(1 + \frac{.046}{12} \right)^{48} - 1 \right)} = \$382.03$$

IWBAT compute the total cost of a car purchase, compute the monthly payment, and investigate the effect of a down payment on the total cost and monthly payment.

8.4 Car Payments

12/19/14

You are financing a \$16,720 2012 Chevrolet Volt for 48 months at 4.6% APR. What is the monthly payment?

$$M = \frac{Pr(1+r)^n}{(1+r)^n - 1}$$

\$382.03

What if the interest rate was 5.8%?

Via TVM solver \$391.14

extra \$400

What if the rate was 8.5%?

Via TVM solver \$412.12

extra \$1400

IWBAT compute the total cost of a car purchase, compute the monthly payment, and investigate the effect of a down payment on the total cost and monthly payment.

8.4 Car Payments

12/19/14

What goes into the total cost of a car purchase?

payments (n) + down payment

IWBAT compute the total cost of a car purchase, compute the monthly payment, and investigate the effect of a down payment on the total cost and monthly payment.

8.4 Car Payments

12/19/14

Paolo and Gabriela both qualified for 5.5% financing. Paolo purchased his car for \$14,000, but Gabriela negotiated her car down to \$11,500. How much money will Gabriela save compared to Paolo over the life of the loan?

36 mo

$m = \$4122.74$

$m = \$347.26$

$T = \$15,218.64$

$T = \$12,501.36$

$$\begin{array}{r} \$15,218.64 \\ - 12,501.36 \\ \hline \$ 2,717.28 \end{array}$$

IWBAT compute the total cost of a car purchase, compute the monthly payment, and investigate the effect of a down payment on the total cost and monthly payment.

8.4 Car Payments

12/19/14

You are financing a \$16,720 2012 Chevrolet Volt for 48 months at 4.6% APR. You have an option of a 15% down payment. What is the difference in the total cost of the car with and without a down payment?

$$\text{Without dp} \\ m = \$382.03$$

$$T = \$18,337.44$$

$$\text{With dp } \$2508 \\ m = \$324.72$$

$$T = \$18,094.56$$

$$\text{Saved } \$242.88$$

IWBAT compute the total cost of a car purchase, compute the monthly payment, and investigate the effect of a down payment on the total cost and monthly payment.

8.4 Car Payments

12/19/14

You are financing a \$16,720 2012 Chevrolet Volt for 48 months at 8.6% APR. You have an option of a 15% down payment. What is the difference in the total cost of the car with and without a down payment?

without dp	with dp \$2508
$m = \$412.90$	$m = \$350.98$
$T = \$19819.20$	$T = \$19355.04$

Saved \$464.16

Do you save more, less, or the same amount as when the APR was 4.6%?

IWBAT compute the total cost of a car purchase, compute the monthly payment, and investigate the effect of a down payment on the total cost and monthly payment.

8.4 Car Payments

12/19/14

Vocabulary: Appendix A.3 Key Terms

Practice: 8.4.2

Quiz 8.4.3

IWBAT compute the total cost of a car purchase, compute the monthly payment, and investigate the effect of a down payment on the total cost and monthly payment.

What is the effect of a down payment on the total cost and monthly payment?

Down payment makes the monthly payment less, because you borrow less principal.

What are incentives?

Something given to encourage an action.

- BOGO
- low APR
- no down pmt
- included
 - upgrades
 - maintenance
- discount
- rebate
- Cash back

IWBAT

- Investigate various incentives such as cash back, rebate, low APR, and balloon payments.
- Calculate the effect of incentives on the total cost.
- Use the prepayment formula to compute a balloon payment.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

8.5 Dealer Incentives

01/06/15

Which would you prefer to have and why?

New Luxury Model

\$1000 Cash Back

— OR —

\$750 Cash Back **Plus**

5.6% APR

— OR —

2.9% APR Available

cash back - Money received from the dealer at signing

- down payment
- cash
- monthly payments

IWBAT investigate various incentives such as cash back, rebate, low APR, and balloon payments, calculate the effect of incentives on the total cost, and use the prepayment formula to compute a balloon payment.

8.5 Dealer Incentives

01/06/15

rebate - money back from the
manufacturer (usu. to dealer)

special APR (preferred customer) financing-

Better credit = better APR

Lowest APR = excellent credit

IWBAT investigate various incentives such as cash back, rebate, low APR, and balloon payments, calculate the effect of incentives on the total cost, and use the prepayment formula to compute a balloon payment.

8.5 Dealer Incentives

01/06/15

How does APR affect the monthly payment and the total cost of the vehicle after 60 months?

Vehicle: \$16,595

APR: 6.75%

Pmt: \$ 326.65

Total cost: \$ 19,599

$$m = \frac{Pr(1+r)^n}{(1+r)^n - 1}$$

TVM solver

Vehicle: \$16,595

APR: 5.6%

Pmt: \$ 317.75

Total cost: \$ 19,065

$$TC = M \cdot n$$

Vehicle: \$16,595

APR: 2.9%

Pmt: \$ 297.45

Total cost: \$ 17,847

IWBAT investigate various incentives such as cash back, rebate, low APR, and balloon payments, calculate the effect of incentives on the total cost, and use the prepayment formula to compute a balloon payment.

8.5 Dealer Incentives

01/06/15

Cash back vs. Less cash back + lower APR

Vehicle: \$16,595

APR: 6.75%

Pmt: \$ 326.65

Total cost: \$ 19,599

Vehicle: \$16,595 - \$750 cash back = \$15,845

APR: 5.6%

Pmt: \$ 303.39

Total cost: \$ 18,203.40

Vehicle: \$16,595 - \$1000 cash back = \$15,595

APR: 6.75%

Pmt: \$ 306.96

Total cost: \$ 18,417.60

IWBAT investigate various incentives such as cash back, rebate, low APR, and balloon payments, calculate the effect of incentives on the total cost, and use the prepayment formula to compute a balloon payment.

8.5 Dealer Incentives

01/06/15

Which would you prefer to have and why?

+

++

New Luxury Model

\$1000 Cash Back

— OR —

\$750 Cash Back **Plus**

5.6% APR

— OR —

2.9% APR Available

IWBAT investigate various incentives such as cash back, rebate, low APR, and balloon payments, calculate the effect of incentives on the total cost, and use the prepayment formula to compute a balloon payment.

8.5 Dealer Incentives

Why offer incentives?

01/06/15



IWBAT investigate various incentives such as cash back, rebate, low APR, and balloon payments, calculate the effect of incentives on the total cost, and use the prepayment formula to compute a balloon payment.

8.5 Dealer Incentives

Why offer incentives?

01/06/15



IWBAT investigate various incentives such as cash back, rebate, low APR, and balloon payments, calculate the effect of incentives on the total cost, and use the prepayment formula to compute a balloon payment.

8.5 Dealer Incentives

01/06/15

Balloon Payment

Small payments per month then
a large payment at the end

$$A = P(1 + r)^h + M \left[\frac{1 - (1 + r)^h}{r} \right]$$

IWBAT investigate various incentives such as cash back, rebate, low APR, and balloon payments, calculate the effect of incentives on the total cost, and use the prepayment formula to compute a balloon payment.

8.5 Dealer Incentives

01/06/15

Balloon Payment

$$A = P(1+r)^h + M \left[\frac{1-(1+r)^h}{r} \right]$$

Vehicle: \$16,595 P

APR: 5.6%

m Pmt: \$199/mo. for 60 mo. $.056/12$

Balloon Pmt: \$ 8200.60

Total cost: \$ 20,140.60

$$TC = m \cdot n + A$$

$$A = 16595 \left(1 + \frac{.056}{12} \right)^{60} + 199 \left(\frac{1 - \left(1 + \frac{.056}{12} \right)^{60}}{(.056/12)} \right)$$

IWBAT investigate various incentives such as cash back, rebate, low APR, and balloon payments, calculate the effect of incentives on the total cost, and use the prepayment formula to compute a balloon payment.

Vocabulary: Appendix A.3 Key Terms

Practice: 8.5.2

Quiz 8.5.3

IWBAT investigate various incentives such as cash back, rebate, low APR, and balloon payments, calculate the effect of incentives on the total cost, and use the prepayment formula to compute a balloon payment.

8.6 Owning & Operating

01/07/15

Use the prepayment formula to compute a balloon payment.

$$A = P(1 + r)^h + M \left[\frac{(1 - (1 + r)^h)}{r} \right]$$

Vehicle: \$19,949

APR: 5.1%

Pmt: \$199 /mo. for 48 mo.

Balloon Pmt: \$ 13,881.59

8.6 Owning & Operating

01/07/15

Explore the costs to maintain and use an automobile.

gasoline

oil changes

tires

insurance

driver's license

transmission

coolant system

emissions test

lights

belts & hoses

wipers

brakes

battery

clutch

IWBAT

- Perform calculations based on miles per gallon and cost per mile.
- Calculate the average cost per mile.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

8.6 Owning & Operating

01/07/15



Gas

Gas prices vary based on vehicle and location (and gas prices can change drastically from year to year), but you can count on fuel to cost you a minimum of \$30 each month, and up to hundreds.

 Play



Wear and tear

Over the course of a year or even just a few months, you will have to fix or replace the parts on your car that wear out. For example, tires wear out around 60,000 miles or three years.

 Play



Maintenance

There are some things you have to do to prevent your car from needing major repairs (like a new engine). These include oil changes and tune-ups.

 Play



Insurance

You are required by law to have a policy on any car that you drive. Depending on the car, this could cost you several hundred to thousands each year.

 Play

IWBAT perform calculations based on miles per gallon and cost per mile and calculate the average cost per mile.

8.6 Owning & Operating Maintenance

01/07/15

- \$20 to \$40 — **Oil change:** You can do this yourself or take your car to a service station to have someone do it for you. You have to replace the old oil in your car every 3,000 to 10,000 miles, depending on whether the car is older or newer and manufacturer recommendations.
- \$25 to \$150 — **Transmission fluid replacement:** This can prevent the transmission from burning out, but not all car manuals recommend it. It varies depending on the kind of car you drive.
- \$50 to \$250 — **Tune-up:** Your car manual will tell you how often your car should have a tune-up. The meaning of tune-up varies: It can include oil and fluid change and small replacements like new spark plugs, or it can be a "check-up" for your car, to see if anything needs to be fixed. A tune-up can be relatively cheap — as low as \$50 — or it can cost you a couple hundred dollars if the mechanic finds something wrong. You can have a tune-up done at the dealership or at a trusted garage.

IWBAT perform calculations based on miles per gallon and cost per mile and calculate the average cost per mile.

8.6 Owning & Operating Insurance

01/07/15

CO mandatory
covers minimums
- liability
- injury

Must have comprehensive
insurance when you are paying
for the car

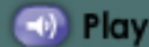
IWBAT perform calculations based on miles per gallon
and cost per mile and calculate the average cost per mile.

8.6 Owning & Operating Other Costs

01/07/15

Registration

Every time you move to a new place, you must register your vehicle. The cost of this varies by state but is generally less than \$100. You must renew your registration each year.



License

You must get a license to drive a car, and change it when you move to a new place. It costs about \$5 to \$25 to get or replace a license.



Taxes

Every year, you pay an excise tax in most municipalities (towns). This is based on the age and cost of the vehicle and can range from \$30 to a couple hundred dollars. This is sometimes included in the cost of your car's registration.



Parking

If you live in an urban area, you may have to pay to park your car near your house or your job. This can cost anywhere from \$0.25 an hour to more than \$100 per month.



IWBAT perform calculations based on miles per gallon and cost per mile and calculate the average cost per mile.

8.6 Owning & Operating

01/07/15

Here are the average prices of gas per gallon for different regions of the United States along with the national average during the week of April 5, 2010.

Region	Average price 4/2010
United States	2.798
East Coast	2.773
Midwest	2.754
Gulf Coast	2.682
Rocky Mountain region	2.791
West Coast	3.037

Source: U.S. Energy Information Administration (May 2010)

IWBAT perform calculations based on miles per gallon and cost per mile and calculate the average cost per mile.

8.6 Owning & Operating MPG

01/07/15

Estimating MPG

Odometer — total milage

trip meter — miles since last reset

pump — gallons

$$\frac{\text{miles driven since last fill up}}{\text{gallons of gas used}}$$

IWBAT perform calculations based on miles per gallon and cost per mile and calculate the average cost per mile.

8.6 Owning & Operating

01/07/15

Average Cost per Mile (ACM)

Cost	Per year
Car payment	\$2700
License and registration	89
Tax	0
Insurance	1188
Parking	540
Wear and tear	60
Maintenance	365
Gas	843.59

Example:

- ✗ \$99-per-month insurance policy
- ✗ \$365 for routine repairs
- ✗ \$30 for oil change
- ✗ \$225-per-month car payment
- ✗ \$89 to renew his license and registration
- ✗ \$45 for a monthly parking pass
- ~33 mpg
- Gas costs ~\$2.75/gal
- Drove 10,123 mi.

$$\text{Sum: } \$ \frac{5785.59}{10123 \text{ mi}} \quad \frac{\cancel{\text{mi}}}{\cancel{\text{mi}} \text{ gal}} \text{ gal}$$

$$\text{ACM: } \$0.57/\text{mi}$$

IWBAT perform calculations based on miles per gallon and cost per mile and calculate the average cost per mile.

Vocabulary: Appendix A.3 Key Terms

Practice: 8.6.2

Quiz 8.6.3

IWBAT perform calculations based on miles per gallon and cost per mile and calculate the average cost per mile.

8.7 Equity & Depreciation

01/08/15

Define the concepts of equity and depreciation.

depreciation - when objects lose
value

equity - the value an object has
above what is owed

IWBAT

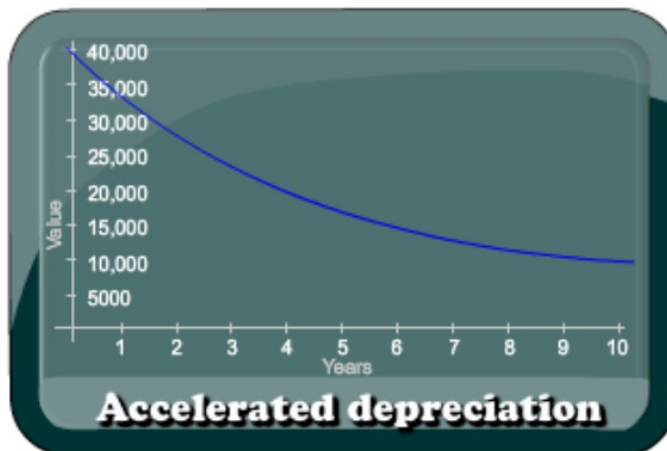
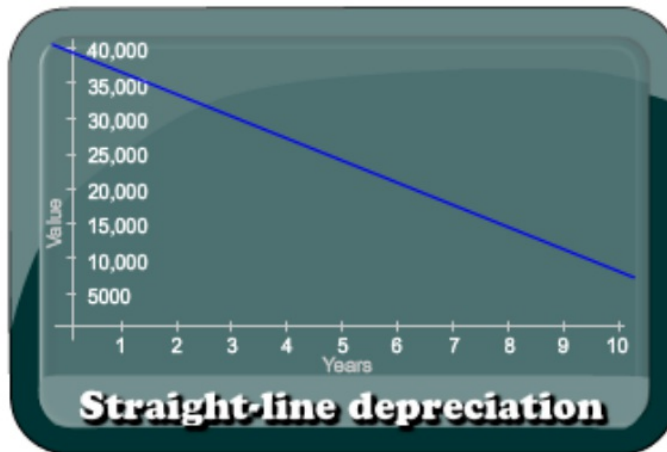
- Understand how to compute depreciation using the straight-line method and the sum-of-years method.
- Understand that equity decreases as the automobile depreciates.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

8.7 Equity & Depreciation

01/08/15

Two kinds of depreciation



IWBAT understand how to compute depreciation using the straight-line method and the sum-of-years method, and understand that equity decreases as the automobile depreciates.

8.7 Equity & Depreciation

01/08/15

Straight line depreciation

Annual depreciation = $\frac{\text{initial value} - \text{salvage value}}{\text{useful life of car}}$

$$\frac{\$5000 - 200}{8} = \$600$$

$$C = 5000 - 600(3) = \$3200$$

car value = $I - Dx$

Accelerated depreciation

The denominator: To use the sum-of-years method to calculate the depreciation, start by adding together the number of years the car will be useful.

The numerator: In the first year, use the highest number used to calculate the sum of years.

Multiply the fraction by the total depreciation.

$$8+7+6+5+4+3+2+1$$

$$\frac{8}{36} \$1111.11 \quad \frac{7}{36} \$972.22 \quad \frac{6}{36} \$833.33$$

$$\$5000 - 2916.66 = \$2083.34$$

IWBAT understand how to compute depreciation using the straight-line method and the sum-of-years method, and understand that equity decreases as the automobile depreciates.

8.7 Equity & Depreciation

01/08/15

Cole just bought a used car, and he estimates that it will be drivable for 6 more years, at which point it will have a salvage value of \$100.

- What is the equation of the line?

$$C = I - Dx \quad I = \$4000 \quad X = \text{yrs since purchase}$$
$$\frac{\$4000 - 100}{6 \text{ yr}} = \$650 / \text{yr.}$$

$$C = 4000 - 650x$$

$$C(3) = 4000 - 650(3) = \$2050$$

$$C = 4000 - 650(-8) = \$9200$$

IWBAT understand how to compute depreciation using the straight-line method and the sum-of-years method, and understand that equity decreases as the automobile depreciates.

8.7 Equity & Depreciation

01/08/15

Gabriela just bought a brand new car for \$29,700, and she has been told by the dealer that in 4 years, it will be worth \$17,100.

- How much will the car be worth after 4 years? Is this the same amount that the dealer said it will be worth after 4 years?

$$15 + 14 + \dots + 1$$

$$\frac{15}{120} \quad \$3712.50$$

$$\frac{14}{120} \quad \$3465$$

$$\frac{13}{120} \quad \$3217.50$$

$$\frac{12}{120} \quad \$2970$$

$$\left. \begin{array}{l} \$3712.50 \\ \$3465 \\ \$3217.50 \\ \$2970 \end{array} \right\} \$13,365$$

$$\begin{array}{r} \$29,700 \\ - 13,365 \\ \hline \$16,335 \end{array}$$

IWBAT understand how to compute depreciation using the straight-line method and the sum-of-years method, and understand that equity decreases as the automobile depreciates.

Vocabulary: Appendix A.3 Key Terms

Practice: 8.7.2

Quiz 8.7.3

IWBAT understand how to compute depreciation using the straight-line method and the sum-of-years method, and understand that equity decreases as the automobile depreciates.